Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

GEOLOGY AND PALÆONTOLOGY.

Mimic Earthquake Near Akron, O.—A district of country lying about five miles south of Akron, O., was on the night between Thursday, February 9th, and Friday, February 10th, the scene of a commotion that well simulated an earthquake on a small scale. About nine o'clock in the evening a smart shock disturbed the inhabitants and caused much consternation, which was intensified when between two and three the following morning a severer one, accompanied by a loud noise, as of an explosion, awoke the sleepers by shaking the houses and cracking the walls of some of them. When daylight came several long clefts in the ground were discovered, furnishing evidence of some subterranean disturbance during the night.

Similar phenomena occurred almost in the same spot in 1882 and 1883. At that time a cleft from two hundred to three hundred feet long was formed, which crossed a road, marking its course with a furrow, such as that made by a plough. This crack was not more than an inch or two in width, but was sounded with a stick to the depth of several feet (some say fifteen or twenty). It passed under a house, cracking the cellar-wall. The noise accompanying it was likened by some of those who heard it to a cannon fired in the cellar. The explosion of Friday morning last (February 10) was heard by several persons in Akron, at a distance of about five miles.

The writer visited the spot last summer, at the request of a gentleman who had leased several farms, with the intention of drilling for gas. On making inquiry of one of the oldest residents, he learned that an earlier event of the same kind took place about twenty-five years ago, but could get no details.

The phenomena pointed, not to seismic causes, but to subterranean explosions, presumably of gas. The ground is clay and gravel, moraine matter, probably not less than a hundred feet in depth.

Another account differs somewhat in the details: "After the explosion in 1882, then the fissures, some of them nearly half a mile long, radiated to the top of a rise of ground. Mr. Thornton dug a hole nine (9) feet deep at the point where the fissures crossed or formed a centre, and at that depth found the cleft in the earth as pronounced as it was at the surface."

So far as it is possible to determine it, the cause of the commotion is due to the presence of a certain, perhaps a small, amount of natural gas, which, in ordinary circumstances, escapes unnoticed. But when the ground is frozen (and all these explosions have occurred in the winter) the gas is unable to ooze through the soil and accumulates below the frozen crust, until its elasticity becomes sufficient to burst it; hence the explosion, the shock, and the cracks in the ground.

At the outburst in 1883 several of these cracks could be seen radiating from a central point in a field and extending to different distances. One of the spectators says these clefts divided the field into half or quarter-acre pieces. Similar results followed the late explosion. I have not seen the place since, but learn that the fissures very soon closed, or were filled up in consequence of a rapid thaw.

"One peculiar feature is that while former disturbances rent greater fissures and were accompanied by much greater damage to property than the recent ones, yet, so far as is known, none of the former explosions was heard or felt in this city."

It would be interesting to inquire if any similar events are on record elsewhere in regions yielding natural gas. Perhaps this note may be the means of calling out such cases if they exist.

It may at first sight appear as if so powerful explosions and shocks must indicate natural gas in considerable quantity. But when we reflect that the pressure in a well of small yield rapidly rises to a high figure when the bore-hole is closed, we see that such an inference is not safe. No other indications of gas are yet known in the immediate neighborhood, as would probably be the case if a large supply were accessible.—*E. W. Claypole.*

GEOLOGICAL NEWS.—PRIMORDIAL.—It is stated that vestiges of the primordial fauna, hitherto unknown in France, have been discovered by M. Bergeron in the Black mountain (la Montagne Noire) of Herault. Conocoryphe and Paradoxides are represented by fine examples.

DEVONIAN.—Mr. A. S. Woodward (*P. Z. S.*, 1887) notes the presence of a canal-system, evidently sensory, in the shields of Pteraspidians. He believes these to represent a "lateral-line" system.

B. Stürtz (*Palæontographica*, Band 32) describes several new echinoderms from the middle strata of the Lower Devonian upon the Rhine. *Ophiurella primigenia*, *Furcaster palæozoicus*, *Bundenbachia beneckei*, and *B. grandis* are the new Ophiuroids and related forms described; the star-fishes include an Astropecten, Palastropecten and Eoluidia, a Loriolaster and a Palasteriscus.

K. A. Penecke has contributed to the Zeitschrift der Deutschen Geologischen Gessellschaft for 1887 an account of the fauna and the age of some palæozoic coral reefs in the eastern Alps.

Dr. J. Walker discusses the structure of Crinoids, with special reference to the species found in the Solenhofer slates and the

Diceras-chalk of Kelheimer, in the 32d volume of *Palæontographica.* Four plates illustrate the memoir.

CARBONIFEROUS.—Mr. Kliver describes (*Palæontographica,* Band. 32) various arthropod remains discovered in carboniferous strata of Saarbrucken and Wettin-Löbejüner. The species include an Ectoblattina, two species of Termes, a Dictyoneura, and an Acridites.

Prof. Boyd Dawkins states his conviction that the soundings for the proposed tunnel across the Straits of Dover will bring to light the existence of vast beds of coal, connected, on the one hand, with the coal measures of Belgium and the north of France, and, on the other, with those of Wales and Somersetshire (England).

PERMIAN.—The second part of Dr. Anton Fritsch's "Fauna der Gaskohle and der Kalksteine der Perm-formation" of Bohemia, has been published. These strata rest upon Silurian rocks. The coals, clays, and ironstones have a carboniferous facies, and the conformable limestones are believed to be true Permian. "The palæontological evidence," says the reviewer in *Nature,* "is somewhat anomalous in the views of purely British fossilists, but it speaks very forcibly and in a most suggestive manner to the students of the Gondwana formation of Hindustan." Two new species of Dendrerpeton are described, and a family Dendrerpetonidæ is characterized.

M. Bayle has found two entire specimens of Gaudry's *Actinodon frossardi* in the Permian deposits at Telots. Gaudry's descriptions were based upon fragments discovered near Antun. Actinodon was probably a carnivorous reptile about 2½ feet long, living more upon land than in the water, and formed for gliding serpentine movements. The stage of evolution presented by this reptile is comparable, according to M. Gaudry, to that of the Chelydosaurus of Bohemia, the Zygosaurus of Saxony and Russia, the Platyops of Russia, the Gondwanosaurus of Hindustan, and the Trimerorhachis and Eryops of Texas. Its scales were disposed in chevrons, its vertebræ were formed of separated pieces, and its large ribs gave attachment to ample muscles.

The internal shell of the Sepiadæ, and its relations with the Belemnites, forms the subject of an article by Dr. E. Riefstahl in Volume 32 of the *Palæontographica.*

The fossil flora of the Red Sandstone and Muschelkalk of the neighborhood of Commern is described by Dr. Max Blackenhorn in the 32d volume of Zittel's *Palæontographica.*

TRIAS AND JURASSIC. — The German *Palæontographica* (Stuttgart, 1886) contains a geological and palæontological monograph of the "Vilser" Alps, with especial reference to the Brachiopoda. The work is illustrated with fifteen plates and a map of the region. The strata belong to the Trias and Jura. The general facies of the fauna, especially that of the Brachiopoda, is Mediterranean rather than Central European. Several new species are described.

The Asterids of the White Jura of Swabia and Franconia, with researches into the structure of the Echinodermata and the calcareous skeleton of the Asteriadæ, form the subject of the last memoir in Volume 32 of *Palæontographica.*

A new Iguanodon, *I. dawsonii,* has been described by Mr. R. Lydekker from the Wealden strata of the Isle of Wight.

G. C. Laube and G. Bruder describe the Ammonites of the Bohemian chalk in Band. 38 of *Palæontographica.* Eleven Cenomanian, twenty-five Turonian, and fifty-seven Senonian forms are enumerated, several of them new. The memoir is illustrated by six plates.

Mr. A. S. Woodward (*P. Z. S.*, 1887) refers the genus Rhacolepis, Agassiz, to the neighborhood of the Clupeidæ, and places it near Elops. It seems to have been one of the forerunners of the latter to have been developed in Jurassic times, and to have swarmed in Cretaceous seas. The fossils are common in the Serra de Araripe, in Northern Brazil.

CRETACEOUS.—Herr Carl Diener, in a contribution to the knowledge of the Cretaceous formation of Syria (Zeit. d. Deutschen geol., ges. 1887) gives a table of subdivisions, placing the Lebanon chalk partly in the Turonian and partly in the Cenomanian and the Arâja-Kalkstein at the bottom of the series.

M. S. Meunier, from experiments made upon the chalk of Beauval with acidulated water, arrives at the conclusion that the deposits of phosphate of lime found in chalk originated in the same way as the concretions of flint in the same material, *i.e.*, the two substances are sensibly soluble under like conditions, and their method of concretion is similar. It is a concentration by capillary action of a material which was originally distributed uniformly.

TERTIARY.—Mr. A. S. Woodward revises the British Eocene species of Myliobatis in the January issue of the *Ann. and Mag. Nat. History*. He distinguishes four—*M. dixoni*, *M. striatus*, *M. toliapicus*, and *M. labidens*, new species, the last from the Brackleshem Beds.

Mr. A. S. Woodward (*P. Z. S.*, 1887) asserts that a fossil representative of Chlamydoselachus, Garman, from the Pliocene beds of Oreiano in Tuscany, was described and figured (under another name) by Mr. R. Lawley in 1876. He suggests that this species be named *C. lawleyi*. The figures will be found in "Nuovi Studi sopra di Peci ed albri Vertebrati fossili delle cobline Toscane," di Roberto Lawley, Florence, 1876.

Dr. O. Roger describes (*Palæontographica*, vol. 32) some teeth of *Dinotherium bavaricum* H. v. Meyer, discovered in the valley of the Zusam, a small tributary to the Danube.

M. Lemoine has discovered in the eocene beds near Rheims, the teeth, jaws, etc., of five generic types of carnivora. The first of these equals Arctocyon in size, and seems analogous to Dissacus Cope. The two molars preceding the last show a commencement of the division of the anterior cusp of the tooth. Another type approaches Proviverra; another is named Tricuspiodon from the three cusps which in the molar teeth precede a very small heel, and recalls the Spalacotherium of the Prexbeek beds while another (Procynictis) has very singular molars, yet presents analogies with Amblotherium and Peramus of Owen. These forms tend to link the mesozoic with more recent faunas.

M. Gaudry has recently announced to the Acad. de Sciences of Paris the discovery of a gigantic tortoise in the middle Pliocene of Perpignan. The head, limbs, and part of the neck have been recovered from the encasing hard rock. In size this tortoise exceeds any living species, since the carapace is 1.20 metre long and a metre wide. The carapace of the Aldabra tortoise (*Testudo elephantina*) scarcely reaches a length of one metre. The only other tertiary or later fossil tortoises equalling in size the *Testudo perpiniana*, and that discovered twenty years since by M. Gaudry in the miocene of Mt. Lebanon, and a sub-fossil species (*T. grandidieri*) brought from Madagascar by M. Grandidier. *T. perpiniana* seems to have more affinity to *Testudo irrepta* and *triseriata* of Mauritius than to any others, since like them it has a depressed smooth carapace, relatively slender limbs, etc. In the great development of its sternum, however, it approaches the Atdabra tortoise.

Mr. A. Bell (*Geol. Mag.*, Jan., 1888) enumerates the few species of British Upper Tertiary corals known, and gives a description of *Sphenotrochus boytonensis* Tomes, n. sp.

The first part of Band. 32 of Zittel's *Palæontographica* contains "Contributions to the Knowledge of the Bryozoan-fauna of the Older Tertiary of Southern Bavaria," by Carl Koschinsky.

The Tertiary plants from the valley of the River Buchtama, at the foot of the Atlas, and described in *Palæontographica* (1886–87) by J. Schmalhausen.

PLISTOCENE.—Carl Ochsenius has contributed two papers upon the age of some parts of the South American Andes to the Zeitschrift der Deut. Geol. Ges. (1877). He attributes the elevation of the platform of Lake Titicaca to volcanic action, and assigns it to quaternary time.

MINERALOGY AND PETROGRAPHY.[1]

PETROGRAPHICAL NEWS.—In an article on the contact phenomena presented by certain Scottish olivine diabases, cutting sandstones and shales, Stecher[2] gives us some new and important ideas on the general subject of contact action. These olivine diabases are carefully described in all their varieties. Skeleton crystals of apatite, corroded augites, twinned plagioclase, dihexahedra of quartz, and various rare minerals are noted in them. The quartz shows anomalous action in polarized light, and is peculiar in that its hexagonal sections are seen under crossed nicols to consist of a kernel of quartz substance, surrounded by a rim of calcite. In some instances the olivine yields analcite by alteration. The most interesting portion of the paper is that which treats of the endogenous changes which have taken place in the dykes under the influence of the intruded rocks. Although more acid on their edges and in the neighborhood of sandstone inclusions, it was found that only in these places in the dykes is there any considerable development of olivine in perfect crystals. At a somewhat greater distance from the contact, the olivine becomes more skeleton-like in form. In the centre of the dykes it is absent. This is accounted for by Stecher in supposing that the material of the dykes cooled quickly on its edges, and thus preserved in their entirety the olivine which had already crystallized before the rock reached the surface of the earth. As the inner portion cooled more gradually, the magma became more acid as it dissolved material from the sandstone and slate pieces, torn from its walls, and thus re-dissolved the olivine, and then solidified under the changed conditions.—In contrast to the results obtained by Stecher, in which the effect of contact action is seen only in the eruptive rock, are those obtained by Greimi[3] in his studies of the phenomena presented by the intrusion of the Upper-Devon-

---

[1] Edited by Dr. W. S. Bayley, Colby University, Waterville, Maine.
[2] Min. u. Petrog. Mitth. ix., 1887, p. 145.
[3] Neues Jahrb. f. Min., etc., 1881, i., p. 1.